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GOLD MEDAL AMERICAN INSTITUTE

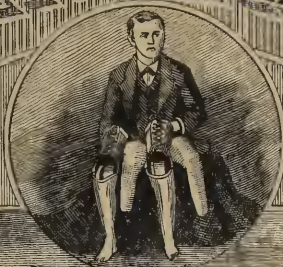
ABSTRACT

CENTENNIAL EXHIBITION PHILADELPHIA



NO 21
MARKS
PATENT

ARTIFICIAL LIMBS



WITH
INDIA RUBBER HANDS AND FEET
701 BROADWAY.

GOLD MEDAL AMERICAN INSTITUTE



NEW YORK
CITY
U.S.A.

GOLD MEDAL ATLANTA GA.



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PREFACE.

A demand has been felt for a more condensed presentment of the construction and merits of our Artificial limbs, than that contained in our large pamphlet, which, being a book of 160 pages and profusely illustrated, is too voluminous for the hasty reader. To meet this demand and present our inventions in as few words as possible, we select from our large pamphlet such parts as will convey an understanding of our methods of construction and our claims to excellence, ignoring several hundred testimonials and other matter of more or less import. These pages are therefore to be regarded as an abridgment, and we wish it to be understood that every recipient of this book who is in the least concerned in the subject, is entitled to our large pamphlet, which will be sent upon request, gratis.

We also have a pamphlet printed in the Spanish language, which will be sent to those who are more familiar with that language.

The loss of a leg or an arm has become of such frequent occurrence that in the United States alone there are thousands who are dependent on artificial means for their support and locomotion. Every railroad and mining center has its army of one legged or one armed; almost every hamlet and village has its quota of the mutilated. The vastness of their number, were they brought within our comprehension, would be appalling. Let this book go where it may, there is hardly a doubt that it will reach some one in need of the information it contains. It is hoped it will bring a ray of light to some mutilated one who is groping in darkness for that relief which science, experience, and study alone can give. A wise authority has said, "That in all cases where the human body is to be brought to act on mechanical contrivances, the safest and best plan is to be guided by the judgment of those who have made it a long study, and have had vast experience." We challenge the world to produce any who have had as long, extensive, varied, or successful experience as we have had. This may appear rash, but it is stated with candor and with abundant evidence to justify it.

As a result of many years of close study, we have devised a formula which can be filled out by any one, and which will secure as good results as if the patient came to us in person. This formula is copyrighted and the privilege of using exclusively our own. Thus any one however moderate in means or remotely resident can have every advantage without the expense, fatigue, and annoyance of a long tedious journey, and have the assurance of the best treatment. By this means we have removed a barrier to the comfort and happiness of many. It is no longer necessary for them to either remain on crutches or trust their case with one of the many inexperienced makers with which the country is already burdened.

A. A. MARKS,

701 Broadway, New York City.

Aug. 2, 1886.

ARTIFICIAL LEGS.

Our views of the requirements of an Artificial Leg are: First, *ease* and *comfort* in walking. Second, a natural motion, lightness, elasticity and suppleness, combined with a graceful step. Third; reliance, stability, and durability.

In all these respects we claim that our Artificial legs, with patent India Rubber Feet, are pre-eminent.

The legs are, in the first place, made to fit the stump so as to give the greatest ease and comfort to the wearer, while they operate with freedom, firmness and elasticity. Thus all these indispensable objects are attained, without that complicated mass of machinery resorted to in other kinds of artificial Legs. This fact makes the leg unequalled in point of durability by any similar invention yet presented to the public.

In giving a description of our inventions it does not require a mass of words, nor a complicated description of them to make the most ordinary mind realize and appreciate their value.

Their various and many advantages over all others now in use, will be apparent when the following facts are fully weighed.

It has been well understood among inventors and manufacturers of Artificial Legs, that there was *something* required to improve the foot and ankle, and give more stability and less-unnecessary motion. This was needed to obviate that jerking, slapping noise, that unnatural and exceedingly unpleasant sound both to wearers and others, so frequently heard, and by which Artificial Leg wearers might be heard and observed from other persons at some distance in the street or moving about the house. Some have sought the removal of this difficulty in one way, and some another; but most inventors have, in trying to avoid the difficulty, but added to it. By multiplying machinery of various kinds, although aiming to get rid of *worse than useless* motions, they have added complication to complication, by their many cords and springs which have a tendency to please the unexperienced while the limb is new and unused, but invariably *displease* them as soon as a little wear brings the trappings to a test. The inventor not stopping to think that every additional cord, spring, joint or contrivance but increases the difficulties, adds to the already enormous complications, weakens the limb, and renders the invention liable to greater objections, without accomplishing any advantages whatever.

In these statements we firmly believe we express the views of a large number of inventors. At all events, we *know* we give our own experience, having been engaged in this calling for the last thirty years, and having also been most of our lives engaged in mechanical labors of a nature both instructive and beneficial to those acquiring knowledge in this important art. We feel, therefore, that our labor has been well bestowed in thus being able to give to the unfortunate an Artificial Limb accomplishing every required movement and all the essentials to make the most life-like, light, easy and durable leg ever given to the public, while, at the same time it is free from *all* cumbrous machinery.

The India Rubber Foot is the base of the whole structure, and, although it is elastic, springy and light, it is also the most *reliable, firm and substantial* foundation that ever a limbless person stood or walked upon.

When we first applied our Rubber Feet to Artificial Legs, we did not think they would be suitable for the delicate and fastidious. It was intended more especially for the hard-working mechanic, the farmer, and those whose lives demand toil. But in this we were most agreeably disappointed. To our own surprise and gratification, we soon found it was equally well adapted to their wants as to any others. Nay, more, it was just the thing for the most delicate and sensitive lady in the land; and their joy and gratitude, in being able to perform their many and various duties with facility, ease and symmetry of motion, without noise or unpleasant observation, has been frequently expressed—a sentiment complimentary and fully appreciated.

A word to those who have used and are now wearing the old kinds, with the movable, clattering ankle-joints: Is not your step in your parlors at times taken for a squeaky, broken-down chair, or a rat or a mouse intruding in some corner of the building? Are you not, while walking in the street, sometimes taken for a wheelbarrow crying for grease; and does not your step resemble the clatter of an old shoe with the sole loose and too large for the foot? Would it not be a gain to get rid of these annoying appendages and to be relieved of the great expense and trouble necessarily attending them?

Our patent Rubber Feet most assuredly obviate all these difficulties. We have applied them to a great number of other makers' legs beside our own, many where the legs were new, and more where they were sound, except where the springs or cords were worn out or broken, and have succeeded in making the old leg as good, and, in fact, much better in many cases than a new one of that kind.

We would not state, nor have it inferred from what has been here said, that our leg will last always, under all kinds of rough usage, but this we do say, that it will outlast two of any other kind now in use, and that when it does need repairs—and what thing earthly will last always—it will cost less and be less troublesome than any other Artificial Limb we know of. Its simple mode of construction is conclusive to every one, its little liability of requiring repairs, and its ease of access when repair is needed, are advantages worthy of consideration. And now, after a score of years of unparalleled prosperity in applying the rubber foot, during which time we have received the most flattering praise and enjoyed widespread popularity, *yet*, there is even now, and always will be, an *occasional* RIP VAN WINKLE, just waking up after his *twenty years' sleep*, who does not really understand our inventions, nor comprehend their simplicity. We invite them to ponder the matter and base their judgment on the merits.

Our inventions of 1863 and 1865, after an experience of ten years in following the old theories of making Artificial Limbs with all the cords and flapping ankle joints, &c., &c., has now become a well settled theory, thoroughly proved by long experience, and not only applicable to Artificial Limbs, but is also practiced to a large extent in surgery; the ablest surgeons of the world have, and are treating cases of disease and injury to the ankle-joint where they cannot maintain the control of it, and are compelled, in order to save the foot, to make a passive or laxative motion, that is, such as the patient cannot control at will as formerly; they treat it in a way to ankylose it, thus making it stiff and without any motion whatever. This system has proved to be far preferable to the flapping and uncertain step necessarily rendered by the old manner of treatment. This practice in surgery confirms our theories in their fullest extent.

The following engravings represent Artificial Legs for various amputations as described :

Fig. 1.

Fig. 2.

Fig. 3.

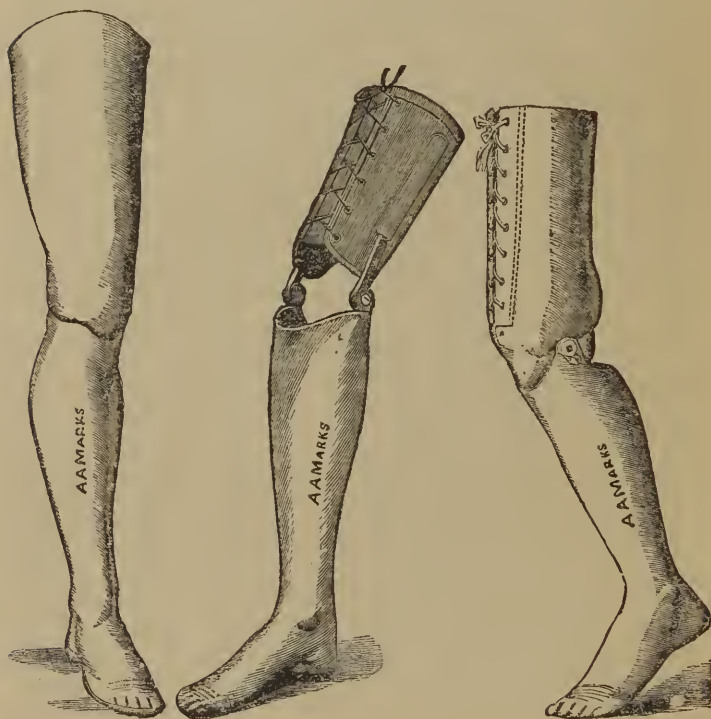


Fig. 1 represents a full length leg standing erect, to be applied in all cases where amputation occurs above the knee joint.

Fig. 2 represents a leg to be applied where the amputation has been below the knee-joint, and the stump is flexible enough and sufficiently long to enable the wearer to use the knee in walking. It also represents the leg with the heel compressed, and in its position after taking the step, and when firmly planted on the ground.

Fig. 3 is termed a knee-bearing leg. It is to be applied where amputation has taken place below the knee, and where the stump is too short or contracted at right angles, so the knee-joint cannot be used in walking. This figure represents the leg slightly bent at the knee, and bearing well upon the toe, as in the act of lifting it to take the next advance step.

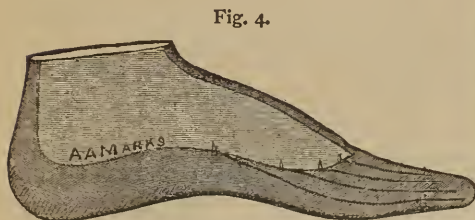


Fig. 4.

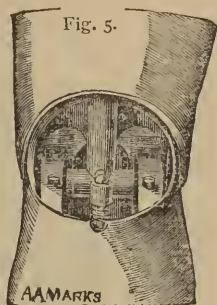


Fig. 5.

Fig. 4 is a view of the India-rubber foot before being applied to the leg. This rubber foot constitutes the main feature in the legs shown in the figures. It is made mostly of India-rubber of a very spongy, light and elastic character. A piece of willow wood, nearly filling the foot at the ankle, or surface, where the leg rests, runs down a distance towards the lower part of the heel; also forward and downwards to the joint at the ball of the foot, as shown by the dotted line. This piece of wood is the base upon which the foot is built, and is also the medium whereby the foot is joined firmly to the leg. The above cut also represents recent improvements which are secured by Letters Patent. The object being to give greater strength or spring to the toes or ball of foot and more particularly to cause the toes to spring back with greater certainty to their proper position, and at the same time add to their strength and unparalleled durability. This is accomplished by the straps seen in cut attached to block, and running forward to extremity of foot; between each strap india-rubber is chemically attached and vulcanized. The leg itself is made of light, tough willow in all cases, except the thigh piece shown in figure 2, and the front part of the thigh piece in figure 3, which are both made of leather. The entire leg and foot in all cases are covered with fine buckskin, neatly coated with a life like, waterproof finish, making it both light and strong. It will be seen that there are no movable ankle-joints in the artificial limbs, the necessity for which being entirely obviated by the elastic rubber foot, which gives all the motion required in walking, and also the ease, firmness, elasticity and reliance, absolutely necessary in a satisfactory Artificial Leg.

It would seem at first sight that no one could walk well on any Artificial Leg, without the moving, flapping ankle-joint, but practice proves this to be erroneous.

The Rubber Foot also gives all the required lateral motion to the foot when stepping on sideling or uneven ground.

Figure 5 gives a rear view of the knee joint of the long leg (Figure 1). The T joint is fastened to the upper part of the thigh piece of the leg, and the gudgeons of the T are held in adjustable, oblique boxes which are easily set at any time by the screws passing through the caps into the main leg, so as to keep the joint working tight and still, yet be free and perfectly flexible, the small projecting bar attached to the T with the button-shaped ball operates upon the spiral spring, so as to throw the foot forward when bent in walking, and to hold the foot under when bent at right angles in a sitting position, this feature is also secured by Letters Patent.

APPARATUS FOR SYME'S, CHOPART'S, PIROGOFF'S

AND OTHER OPERATIONS IN AND BELOW THE ANKLE
JOINT; ALSO FOR SHORTENED LEGS CAUSED
BY HIP DISEASE OR OTHERWISE.

Fig. 6.



Fig. 7.

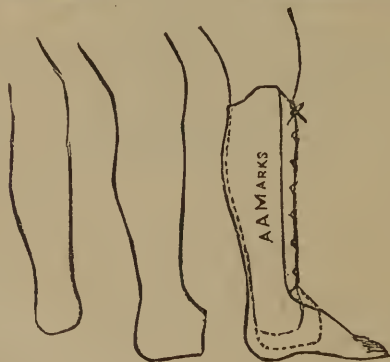


Fig. 6 represents an apparatus for a deformity such as a shortened leg, generally by hip disease. It encloses the leg and the foot, the latter resting upon the sole, as is usual and proper; it may have an ungainly appearance here, but when dressed it is not observable, rather it neatly conceals the deformity. We make them, also, with a thigh-piece, for cases where the knee-joint is weak, and support needed above the knee.

Fig. 7 represents a short leg, for cases where the leg is amputated at ankle-joint or instep, and where the weight can be taken on end of stump. Such can be applied where the stump is no shorter than sound leg. The accompanying engraving represents Fig. 7 in outline.

Probably no apparatus or limb has perplexed the maker as much as apparatus for these amputations or deformities. The conditions to be met seem to have antagonized each other. They are lightness, strength, neatness and adaptability. The method of constructing artificial limbs with ankle joints, springs, cords, etc., make it impossible to combine these conditions, because the difference in the length of the stump and sound leg is necessarily too little to afford room for attachments whereby the foot can be securely fastened to the body of the leg. Apparatus heretofore constructed for these cases have been deficient either in strength or neatness of size about the ankle; if made sufficiently strong to carry the wearer a reasonable length of time, they have necessarily been large, cumbersome and heavy, and if these *fatal objections* have been removed it has been at the expense of *strength*. It therefore becomes necessary to abandon the old method and substitute something that will give all required flexibility without joints, springs, cords, etc. The rubber foot is found to be the medium and it is but recently that we have perfected its attachment. We now attach the rubber foot to the body of the leg in such a manner as not to bring any attached parts in contact with the stump. The socket and block on which the foot is molded is one continuous piece of wood with the natural grain in the foot at right angles to the grain in the body of the leg, thus carrying the grain in the direction of the greatest strain. This is obtained by carving the body of the leg out of the root of a tree which contains a natural, sharp crook. It is thus seen that there are no glued or attached parts whatever to be affected by perspiration, neither is there any machinery to make heavy, cumbersome, and to annoy the wearer by constant rattle. The socket counteracts the tendency of the

Fig. 8.

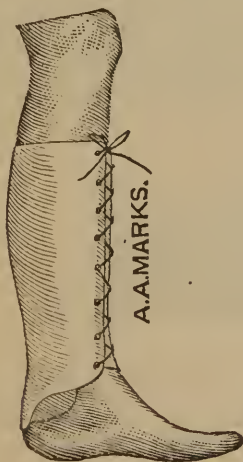
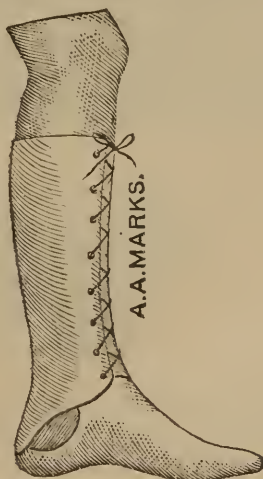


Fig. 9.



extensor muscles from drawing the heel backward and keeps the stump in a natural condition. They are light, neat and durable, will last many years with little or no expense. This method of constructing these apparatus has been thoroughly tested and has met with the most gratifying results.

Our most recent device for the more complex forms of amputations in and about the ankle joint is represented in figures 8 and 9. The apparatus is attached to the stump from the back as represented. The object is to carry the line of the stump further to the back of the apparatus, have the front of the instep smooth, and carry the weight of the patient in a more direct line without adding to the lateral dimension of the ankle of the stump. Its advantage over No. 7 is its smoothness and neatness about the ankle, and its great resisting power. It will dress more naturally and resist more weight than any other apparatus we know of. Fig. 8 represents the apparatus applied to a Syme's or a Pirogoff's amputation. Fig. 9 represents the apparatus applied to a Chopart's amputation. In Chopart's amputation this apparatus is peculiarly adaptable. It does not elongate the leg and offers a perfect protection for the extremity of stump. These apparatus can be made and fitted to a plaster cast of stump without requiring the presence of the patient.

ARTIFICIAL ARMS.

Descriptions heretofore given in our pamphlet have been too meagre to convey to the reader a clear conception of the construction and advantages of the Artificial Arms they are intended to represent. Our purpose has been to describe the arm in such a modest way that the most visionary applicant could not form extravagant anticipations, or be deceived by them.

In 1863 we invented the rubber hand, which was attached to the forearm by means of a spindle held in position by a set-screw, easily detached and replaced by a hook, fork, knife or brush. The fingers were of soft, elastic rubber, molded to a graceful shape and yielding to pressure. Its advantages were its naturalness in appearance and to the touch, and its great durability. It might fall or strike anything without breaking or impairing it. These advantages alone commended it to favor, and many of them were made. In the course

Fig. 10.

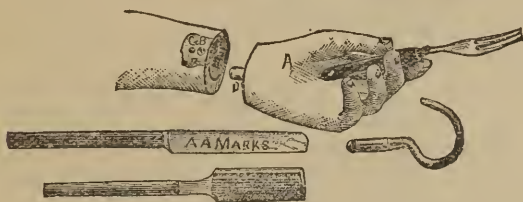


of time an improvement was suggested—that of making the fingers ductile, so that they might be made to assume different positions by the assistance of the opposite hand, or by pressing the hand against any hard surface, the fingers may be placed in any desired position, each one giving the hand a

new appearance ; thus obviating the monotony of the old style, and making it more pleasing to the wearer and less observable to the inquisitive. The fingers, when bent, will hold a valise or package of considerable weight, or hold the reins of a horse in driving.

Figure 11 represents the manner in which the hand is now attached to the forearm ; also the attachment in palm of hand for holding various useful articles. The hand is held to forearm by inserting the spindle D in the socket E ; it is there locked by a self-acting spring. The hand in this position has a rotary motion. A knife, fork, brush or hook can be inserted in the palm, the knife or fork will enable the wearer to feed himself without exhibiting his loss ; the hook to carry heavy weights and perform laborious

Fig. 11.



work ; the brush will enable the wearer to wash his opposite hand. By pressing on button A these articles may be released ; by pressing on button C, the hand can be detached, and any of the articles above named may be used in the socket without the hand ; the hook in this position is the most useful appendage ; it is thereby brought nearer to the stump, and consequently, under greater control. By it as much weight can be carried as the patient's shoulder will endure, shoveling, hauling, and an infinite variety of heavy work can be done. If the patient has suffered an amputation close to the body, or if his hand is unjointed at the wrist, it is more desirable, to dispense with the wrist attachment and depend on the palm attachment entirely for holding these articles.

Fig. 12.

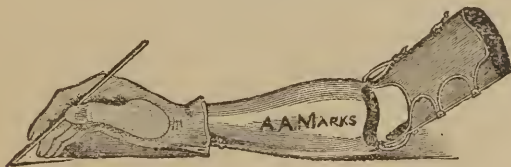


Fig. 12 represents an arm and hand for amputation below the elbow. The hand is dressed with a glove (which is always to be worn) holding a pen, in the act of writing. This has been regarded as a wonderful accomplishment, when, really, it is less difficult than many services the hand is capable of performing. The joints at elbow afford a rotary motion to the forearm.

Fig. 13.

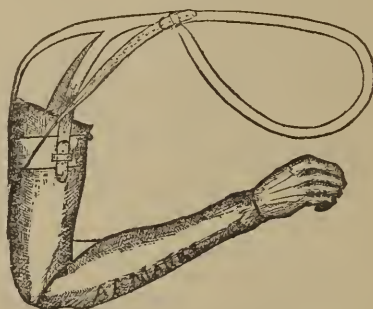


Fig. 13 represents an Artificial Arm for amputation above elbow. The elbow joint is adjustable, and can be tightened or loosened as the patient desires. The arm is held to the person by straps or suspenders passing over and under the opposite shoulder. The elbow-joint is operated by a cord attached to forearm and passing through upper arm attached by buckle to suspender. By urging the shoulder forward this cord is drawn upon and the forearm brought to any desired angle. It is thus seen that the arm and hand are simple in their construction, practical in their application, light, strong and durable. These are the advantages we claim.

AMPUTATIONS.

An amputation that has been made under the most favorable conditions for the use of an artificial limb greatly simplifies the problem of supplying the deficiency and greatly ameliorates the lifelong condition of the patient, if on the other hand the amputation has been made regardless of the artificial limb, the chances are that the patient will be harrassed with some objectionable features, which may occasion a feeling of discontent at the thought that his condition is not as favorable as it would have been had his surgeon exercised more judgment or been more competent. His stump becomes an exhibit of the skill of the operator, always inviting comment, favorable or otherwise; the surgeon therefore cannot be too considerate not only for the interest of his patient but for the protection of his own reputation. The practical knowledge our long experience has given us, in the treatment of every imaginable amputation, embracing those of every grade and school, qualifies us to offer a few suggestions which we doubt not will be regarded by the practical operator in all kindness. Every surgeon should familiarize himself with the principles of artificial limbs, their application, operation and their effects upon the stump. He should know where the points of bearing are, and not fall in the error of many of his confreres in amputating a second and third time merely to get a flap in order that the bone may have something natural to rest upon, when in reality, the end of the stump does not rest upon anything in the artificial limb but is entirely free in all amputations where the bones have been cut. He

should also know that the artificial limb invariably reduces a flabby stump to one of solidity and muscular action, though very much smaller in circumference, hence the accumulation of adipose tissue should be avoided. In the choice of amputation where circumstances do not restrict him, he should exercise a judgment well founded on practical knowledge or observation; we venture a few suggestions. Chopart's amputation of the front part of the foot is not objectionable, although it is attended with the disadvantage of being bulky in appearance about the heel and instep. Pirogoff's amputation in the ankle joint is the most favorable amputation in or about the ankle, the os calcis forms a good protection for the concavity of the tibia and affords a good surface to receive the cushion of the heel to take weight upon. Syme's amputation should always be made when the entire tibia can be retained, and the os calcis must be excised. In all amputations where the tibia and fibula are in part to be severed, the amputation should not be lower down than the juncture of the lower and middle third; between this point and the juncture of the middle and upper third there is but little choice. Above the juncture of the middle and upper third save all the length of bone possible. (In the above, the leg from the knee articulation to the ankle articulation, is divided into three parts, and that part which is adjacent to the knee articulation is called the upper third). Markoe's amputation in the knee-joint with the patella brought to the extreme end is the most favorable knee-joint amputation. In all thigh amputations save all the length the case will admit of. The same advice may be given for all amputations of the arm, forearm or hand, as a single finger is many times more valuable than a whole artificial hand. In all amputations avoid bringing the cicatrix to the anterior of the stump. Dr Sayre's amputation of the knee joint favorably disposes of the cicatrix, and his method is to be highly commended. After the amputation the surgeon should continue his vigilance and avoid the necessity of a secondary operation; primary operations are usually the better. The stump should be constantly bandaged from the end upward and continued so from the time the stump has healed, to the time of applying the artificial limb, this will avoid the flabby stump so greatly disadvantageous to the use of an artificial limb.

HOW SOON AFTER AMPUTATION SHOULD AN ARTIFICIAL LIMB BE APPLIED?

To this very important question, which is so frequently asked, we reply: In the first place it depends largely upon circumstances. Some stumps heal much quicker than others, depending generally upon the condition of the person and cause of amputation. Our experience has proven that the proper time is as soon as the stump is properly healed and the patient recovered, *before* the stump has become fleshed up, as it is sure to do immediately after this has transpired; this condition is usually reached within six or eight weeks after amputation, and sometimes within a month.

Patients are quite frequently advised by their surgeon to *not apply an Artificial Limb* until the stump is *strong and hard*; such advice, however, emanates from those of every limited observation, for we all know that nothing but use makes the inside of our hands more hard and tough than the out-

side ; nothing but EXERCISE makes and keeps our joints flexible and strong. Allow a sound and healthy arm to hang useless by your side for a single month, and what is the consequence ? Every person of good common sense can answer. Our long experience and treatment of thousands of cases certainly entitle us to some consideration on this subject, and if any person entertain any doubts as to the soundness of our views, we ask them to visit or correspond with those who know by *actual experience*.

CHILDREN

And young people who lose their limbs before obtaining their growth, are sometimes prevented by the advice of their surgeons or attendants, from having Artificials on the ground that they will out-grow them. This appears at first sight to be good reason, but upon giving the subject a little reflection, it will be seen that it is ill-advice. It is true they are likely to out-grow them, but the limbs are so constructed that they can be lengthened at small expense.

These limbs possess a very important advantage over ALL others in this respect, on account of their being free from internal complications of cords and springs, which sometimes compose Artificial Limbs, thus saving the largest part of the expense attending the operation of lengthening the limb to keep up with the growth of the patient.

The most important question to be taken into consideration is, how shall we most benefit the tendersprig of childhood, who have met with the loss of a limb, whether by compelling them to use crutches and grow up round-shouldered, hump-backed, one-sided, or otherwise deformed, as in nine cases out of ten they are from the effects of using crutches, or, to at once apply a substitute, and pay proper attention to the use of it, and thereby keep them in natural form, and also avoid the very unpleasant sight of crutches to the eye of the parent and public, and the mortifying effect (to say nothing of the great inconvenience) to the patient. Another very important fact should be taken into consideration, which is, that children growing up without a substitute or limb, to exercise their stump, often lose the use of it, either by its becoming contracted or weak for want of use ; it is frequently the case that they lose the use of their joints and can never wear a limb at all, by going without for years, while obtaining their growth, but where the limb is applied at a proper time, and they grow up with it, they never seem to fully realize their loss, and invariably make the most skillful operators in the world.

Some are without means to secure limbs, and others will say they cannot afford it—then call upon your friends for assistance, or dispense with some of the superfluous ornaments of dress, or do SOME way to provide for the *necessity* of your unfortunate child or friend to avoid its growing up in your sight a constant spectacle of regret and sorrow to yourself, and thereby remove an almost certain barrier to its proper place in society, and its welfare in mature years.

To those who have cases under their care of the nature here mentioned, due consideration to this statement is asked, and although differing as it does from the hasty advice sometimes given, weigh well the fact and your conclusion will unquestionably be right, and your duties plain to those entrusted to your tender care and affection.

TREATMENT OF STUMPS.

It is very important that the patient observe great care in treating the stump; move the joints freely to prevent contraction and preserve the natural motions. Keep it well bandaged from the end upward, in order to reduce and solidify the flesh as much as possible, as it secures a better and much more perfect fitting limb, and renders it much more useful and satisfactory in all respects. Bathing with cold water and vigorous rubbing is also highly beneficial.

PRACTICAL ILLUSTRATIONS.

Fig. 15.



Fig. 14.



Fig. 14 represents a little girl, eight years of age, to whom we applied an Artificial Leg, as there shown.

Fig. 15 represents her as she appeared in September, 1875, when her photograph was taken.

Would she be as well developed, vigorous and competent to occupy her proper sphere in life, had she grown up without the aid of her substitute?

It is very well understood, that young ladies wearing Artificial Limbs are not over desirous of having it publicly known; this is not an exceptional case, notwithstanding her name and address will be given, if desired by persons giving satisfactory reasons.

Figs. 16 and 17 represent one of the most remarkable cases ever treated.

Thomas Kehr, Brooklyn, New York, 10 years of age. Dr. Brady presents this case; read his letter:

Fig. 16.



Fig. 17.



No. 146 Fourth Street, Brooklyn, E. D., New York, May 16th, 1876.

MR. A. A. MARKS—*Dear Sir*: I have thoroughly examined the case of the boy, Thomas Kehr, of this city, who has been wearing a pair of your Artificial Legs for the past six months. About a year and a half ago, he was run over by a train of the S. S. R. R. of Long Island, and both of his lower limbs were so crushed that I amputated them, the one well above the knee, and the other about one inch and a half below. At the time of the operation many expressed a wish that death would occur, as the lad being very poor it was thought that his future would not only be a burden to himself but that his future support, should he reach man's estate, would depend upon the charity of the public, as it was considered about an impossibility for him to serviceably use Artificial Limbs, I am thankful that I can

say that you have made his future worth the living, by giving him the means of good locomotion.

I saw him two weeks after he had put them on for the first time, and it astonished me greatly to see the remarkable use he had already acquired ; since then I have seen him *many* times, and have each time seen marked improvement in the freedom of use in walking. Within the past week I saw him walking on the street, without even the help of a cane, and so little lamed that any person seeing him would not for a moment have the least suspicion that he was using legs other than such as nature provided ; there is only the slightest limp in the right leg.

I feel competent to say, that in this case your Artificial Limbs have proved a *grand success*. I have never before seen Artificial Limbs, which in action, approached so near that of perfection. I attribute the wonderful success in this boy's case, mainly to the superior results achieved by your inventions. Especially can attention be called to the use of the Rubber Foot, thereby dispensing with the the ankle joint, thus giving the wearer an ELASTIC, RELIABLE, and SURE footing, which must greatly relieve him from the care and WATCHFULNESS which must certainly be required by those wearing Artificial Limbs having jointed feet. Your plain and simple mode of construction of Artificial Legs is to my mind *unquestionably* the BEST, and when asked by poor legless persons, as to whose make of Artificial Limbs would be the best to secure for comfort and utility, I most decidedly say without any hesitation, MARKS' !

Very Respectfully,

SAMUEL J. BRADY. M. D.

Fig. 18.



Fig. 19.



Figs. 18 and 19 represent Mr. James McDonald of Mamaroneck, New York, who wears two artificial legs. When the season permits, he may be seen enjoying the pastime of skating. He is so ready on his artificials, that many of his neighbors are not aware of the absence of his natural limbs. The latest information we have received from him, informs us that he frequently indulges in the dance. He attends parties and receptions, and enjoys himself as well as any of the guests.

Fig. 20.



Fig. 21.



Fig. 20 is engraved from a photograph taken of Mr. John W. January, of Minonk, Illinois, late Corporal Co. B, 14th Regt. Illinois Cavalry, who lost both his legs in the war, and to whom we applied a pair of Artificial legs in 1865, on government orders. He was then a mere skeleton, just from the hospital, and weighing but sixty pounds. In January, 1876, after taking a new pair of Government Legs, he sat for his picture, showing his present condition, with Artificial Legs removed, in position to be seen.

Fig. 21 was taken at same time and speaks for itself; he is now in order for business; good health, present weight 180 pounds. Few men of sound, natural limbs perform more actual labor than Mr. January does, he owning and working a large farm, and being engaged in other active business pursuits. This illustrates a single case of both amputations of legs below the knees, showing that persons are by no means helpless who have been thus disabled. Many hundred cases of double amputations have been similarly treated.

AWARDS.

The following are reports of Judges and awards from industrial exhibitions they represent :

American Institute, New York City, 1865.

No. 559, A. A. Marks, for Artificial Limbs, for simplicity of construction and durability. **GOLD MEDAL.**

Professor J. M. Carnochan, J. C. V. Smith, James Knight, M. D., *Judges.*

The American Institute held no Fair in 1866, but at the exhibition of 1867 we have the following report :

No. 238, Marks' Patent Artificial Limbs, have frequently been before the Institute, and continue to sustain their former reputation.

Professor A. K. Gardner, J. C. V. Smith, J. J. Craven, M. D., *Judges.*

American Institute, New York City, 1869. 38th Exhibition.

No. 44, Artificial Limbs, A. A. Marks' Best.—This limb is constructed with an India-Rubber Foot, which from its elasticity, does away with the necessity of motion at the ankle-joint, and also obviates entirely that *heavy thumping sound* when the foot strikes the ground in walking ; an objection which exists in *all other Artificial Legs* which the Committee have any knowledge of. The control which the wearer has over it, and its movements so closely resembling those of the natural limb, as well as the small cost of keeping it in repair (*almost nothing*) entitle it to the highest commendation.

Lewis A. Sayre, M. D., James R. McGregor, M. D., *Judges.*

American Institute, New York City, 1870. 39th Exhibition.

No. 3, Marks' Artificial Limbs. A. A. Marks, New York city.

BEST! The especial point of excellence appears to us to be the *India-Rubber Foot*, by the use of which all complications in the construction of an Ankle-joint are avoided.

Frank H. Hamilton, M.D., Harvey S. Gay, M.D., Wm. H. Van Buren, M.D., *Judges.*

The following is a succession of awards from the same institution :

1871. The Artificial Legs with India-Rubber Feet, are especially recommended for their *simplicity, durability and easy movement.*

1872. The Artificial Limbs manufactured by Mr. Marks continue to merit approval, and are entitled to *all* the confidence the public have to this time reposed in them.

John Osborn, M.D., Harvey S. Gay, M.D., Frank H. Hamilton, M.D., *Judges.*

1873. After a full and impartial examination of the articles above described, the undersigned Judges make report that they find the Artificial limbs, on exhibition by A. A. Marks, worthy of the confidence heretofore reposed in them. We cheerfully endorse all that has been said of them in former examinations ; *their Simple Construction, Easy Movement, Durability, etc.* First Premium, **LARGE SILVER MEDAL.**

John Osborn, M.D., D. F. Fetter, M.D., C. D. Varley, M.D., *Judges.*

1874. We consider the Artificial Limbs of A. A. Marks of great value. *A great improvement—better than any known to us; and of their grade, entitled to the highest award.*

A Silver Medal awarded in 1873, as the *Best*, a Diploma of *Maintained Superiority* awarded.

V. P. Gibney, M.D., H. B. Sands, M. D., E. G. Janeway, M.D., *Judges.*

1875. After a full and impartial examination of the articles above described, the undersigned Judges make report that the Artificial Limbs presented by Mr. Marks, are the same as those offered by him at former exhibitions. We regard them as *Superior to all others in Practical Efficiency and Simplicity*, and would respectfully recommend the award of a Diploma of *Maintained Superiority*.

Francis A. Thomas, M.D., Charles W. Packard, M.D., J. R. McGregor, M.D., *Judges.*

The American Institute Centennial Medal, 1876.

"This Medal (of Gold) is to be awarded only for a machine, product, or process, exhibited this Centennial Year, at the 45th Exhibition of the American Institute of the City of New York. It can be awarded only for a machine, product, or process of great value, decided importance, and of more than usual merit, and then only by a majority of the whole Board of Trustees, upon the written report of three Judges, whose report shall certify to the above requirements, and after said report shall have been approved by a majority of the whole Board of Managers."

Copy of the Judge's Report in Department 3, Group 5, Division A, at the 45th Exhibition of the American Institute, held in the City of New York, October 1876.

No. 72. Artificial Limbs. A. A. Marks, New York City.

"We consider these Limbs remarkable for *Simplicity of Construction, Durability, Efficiency, and Comfort to the Wearer*. We think them entitled to the highest commendations, and believe that their merits call for an award of the Centennial Medal, which we respectfully recommend."

Francis A. Thomas, M.D., Charles W. Packard, M.D., J. R. McGregor, M.D., *Judges.*

The Centennial Medal was accordingly awarded

1877. No. 423. Artificial limbs. A. A. Marks, New York City :

After a full and impartial examination of the articles above described, the undersigned Judges make report that we consider this exhibit of great value and entitled to recognition.

Chas. W. Packard, M.D., Francis A. Thomas, M.D., Augustus Viele, M.D.,
Judges.

1878. Having received the Medal of Superiority in 1877, this Diploma for Maintained Superiority is awarded to him at the Exhibition of 1878.

NATHAN C. ELY, *President;*

C. MCK. LEOSER, *Rec. Secretary.*

New York, Nov. 1878.

INTERNATIONAL EXHIBITION, PHILADELPHIA, 1876.

The United States Centennial Commission has examined the report of the Judges, and accepted the following reasons, and decreed an award in conformity therewith.

Philadelphia, December 11th, 1876.

REPORT ON AWARDS.

Products: Artificial Limbs, with Rubber Hands and Feet.

Name and address of exhibitor, A. A. Marks, New York City.

The undersigned, having examined the products herein described, respectfully recommend the same to the United States Centennial Commission for Award, for the following reasons, viz.: *Utility, Workmanship, and Adaptation to purposes intended.*

HENRY H. SMITH, Professor of Surgery.

Approved by group judges and officials.

J. R. HAWLEY, President.

International Cotton Exposition, Atlanta, Ga., 1881.

REPORT ON AWARDS.

Atlanta, Ga., Dec. 21, 1881.

Group No 19, Class 31. Entry No. 1568. Product, Artificial Limbs.

Name and Address of Exhibitor, A. A. Marks, New York City.

The undersigned having examined the products herein described, respectfully recommend the same to the Executive Committee of the International Cotton Exposition for Award for the following reasons, viz :

1st.—Simplicity in the mechanism of the Knee-Joint and for its excellent movement.

2d.—Durability.

3d.—Rubber Foot, possessing many excellent qualities and compensating for the absence of motion in the ankle-joint. *We recommend that a Gold Medal be awarded.*

Approval of Group Judges,

CHAS. L. WILSON,

AMOS FOX.

Approved,

H. I. KIMBALL, *Director General.*

The only First-class Medal, "which is of gold," Awarded for Artificial Limbs at the WORLD'S INDUSTRIAL AND COTTON CENTENNIAL EXPOSITION, New Orleans, La., 1885.

DEPARTMENT OF AWARDS.—JURY REPORT.

Application, No. 1784, Group, No. 8 ; Class, No. 809.

COMPETITION.

Jurors in the above entitled class, having carefully examined the exhibit made by A. A. Marks, New York City, and all competing exhibits, concur in recommending the award of a first-class medal for artificial limbs.

L. D. CARROLL,

For Department of Awards.

COMMENDATIONS FROM THE PRESS.

New York Times :

"These limbs consist of the simplest possible conditions. The ankle is firmly attached and depends on the elasticity of the India-rubber foot, for the required facility in walking. The elegance, naturalness and efficiency of these Artificial Limbs make them almost perfect."

American Eclectic Medical Review :

"These limbs are beyond all question the most perfect and simple ever made. The principle of the India Rubber Feet and Hands *is the true one* ; and the remarkable skill and extensive experience of Dr. Marks in this branch of surgical appliances is unexcelled in this country OR THE WORLD.

We recommend Marks' Artificial Limbs—unqualifiedly—to *all* surgeons and to all who may require the aid of such appliances."

New York Dispatch :

"We have seen some of these limbs, and examined the peculiar simplicity of their construction ; we have also seen them in practical use, and have been truly astonished with the naturalness and grace with which they walk."

New York Tribune :

"Artificial Limbs manufactured by A. A. Marks seem to combine every feature of utility and comfort to the unfortunate wearer."

Illustrated Weekly :

"Mr. Marks has succeeded beyond expectation in his endeavor to produce the most perfect substitute possible for a lost limb, either leg or arm.

Toledo Blade, Toledo, Ohio :

"The limbs manufactured at the establishment of Dr. A. A. Marks, we are warranted in saying, from personal examination, are beyond any question the most perfect ever made."

Grand Army Record :

"Consisting of the simplest conditions, availed of with most consummate ability, it is a model of elegance, naturalness, and efficiency, and fully deserves the high encomiums it has received from medical and other scientific sources, from the Government, the press and public generally.

New York Evening Mail :

"These limbs are constructed with India-Rubber Hands and Feet, and are models of elegance."

Medical and Surgical Reporter :

"Mr. A. A. Marks makes altogether the best Artificial Leg."

Hartford Courant :

"Lieutenant Governor Sill's son George, who had his legs cut off at Stony Creek last summer, has returned from New York City, where he has been having a pair of Marks' Artificial Legs fitted to him. Young Mr. Sill finds that he can use his artificial limbs very easily, and manages to move about with little trouble even at the present time. The limbs are really wonderful, and when the young man gets accustomed to their use, it is probable that he will be able to move so easily that few, if any, strangers would imagine him deprived of both his natural pedestals. The Patent Legs are *the best invented*, and are made by A. A. Marks."

The National Tribune.

Mr. Marks is the inventor of the rubber hand and foot as applied to limbs, and his device has withstood the test of many years' use at home and abroad. By this invention the complex and unwieldy mechanism employed in the old-fashioned style of limb is superseded through the action of the rubber foot and hand, which compensates for the rigidity of the member to which it is attached. A wonderful counterfeit of the natural gait is thus secured even in cases *where both legs have been lost*.

New York Sun.

ARTIFICIAL LIMBS.

The house of A. A. Marks, 701 Broadway, established 1853, is the oldest in this country, and owing to its peculiar mode of constructing limbs, with rubber hands and feet, enjoys a trade second to none on both continents. Their wide-spread reputation for lightness, durability, and naturalness is evidenced by three orders recently filled, one for the son of the Peruvian President, another for a prominent Neapolitan surgeon, and a third for an attaché of the Japanese Legation. A simple and reliable system renders it unnecessary for subjects to call in person, the proper filling out of blanks being sufficient to insure a perfect fit. This house furnishes a greater proportion of the limbs purchased by the Government for disabled soldiers. Limbs are supplied to subjects ranging from infancy to old age. In the case of little Mable Thompson of New Haven, a leg was applied when she was less than 1 year old, for amputation below the knee to prevent stiffening and contraction of the joint, and in a brief time she was walking naturally; Cleary, a famous pedestrian, wearing two of these artificial limbs, has made a record athletes possessing natural ones might envy.

Farrow's Military Encyclopedia.

Page 104.

*** "The legs contrived by Mr. Marks, the inventor of the rubber hand, not only possess all the valuable features of other legs, but have more points of value in addition. *** This leg dispenses with all machinery of whatever character and has been in use by the Government for officers, soldiers, and seamen for the last twenty years, giving great satisfaction."

New York Medical Journal.

"The flexible rubber foot invented by Mr. Marks, so closely simulates that of the natural foot, that it thoroughly does away with the tell-tale 'thud' that accompanies the ordinary artificial leg."

A FEW COMMENDATIONS FROM SURGEONS.

Mr. A. A. Marks, the instrument maker, makes altogether the best artificial leg I have ever seen.

LEWIS A. SAYRE, M. D.,
Professor of Surgery, Bellevue Hospital Medical College.

From their peculiar mechanism they perfectly fulfill the purpose for which they were intended, and in my opinion have *no superior* at present in use.

Very respectfully,
JOHN J. CRANE, M.D.,
Surgeon to Bellevue Hospital.

The ease and facility with which persons move and walk about and run as it were, is such, that in many cases the Artificial Limb cannot be detected.

Yours truly,
ROBERT S. NEWTON, M. D.

A. A. MARKS, ESQ. :

Dear Sir:—I have carefully examined your Artificial Limbs, and believe, because of their simplicity and strength, that they will be sought for by those who may be so unfortunate as to require them.

Very truly yours, etc.,

JAMES R. WOOD, M.D.,
Surgeon to Bellevue Hospital, Professor of Operative and Surgical
Pathology, Bellevue Hospital Medical College, &c., &c.

ARTIFICIAL LIMBS.

To Commissioned Officers, Soldiers and Seamen of the United States Army and Navy, under new laws and regulations of 1870, 1872 and 1876, granting free of cost Artificial Limbs every Five Years.

The following letter from the Chief Clerk of the Surgeon General's Office explains itself:

War Department, Surgeon General's Office,
Washington, D. C., May 14th, 1875.

Mr. A. A. Marks,

Broadway, New York City.

SIR:—I am instructed by the Surgeon General to acknowledge the receipt of your Bond, as a manufacturer of Artificial Limbs for the United States Government, said Bond bearing date May 13th, 1875. It has been examined, found satisfactory and placed on file

Very respectfully,
Your obedient servant,
SAMUEL RAMSEY, *Chief Clerk.*

Application blanks for limbs, and for free transportation together with sleeping car accommodation to and from our Manufactory will be furnished on request. No attorney needed.

ARTIFICIAL LIMBS MADE AND FITTED FROM MEASURES WITHOUT THE PRESENCE OF THE PATIENT

Is an important feature to those residing at great distances from the manufactory. It would hardly be expected that persons living in South America, Mexico, Europe, or even our own far off States and Territories, would like to incur the expense of money, time and labor of such a journey, to visit New York City, to obtain our Patent Artificial Limbs; this would in most cases prevent their ever obtaining Limbs at all.

Fully three quarters of our patients are treated entirely from measurement. So wide spread is this class of our patrons, that generally we can supply any one with names and address of parties who reside very near to them, to whom they can write and get an expression of their experience.

Persons ordering limbs to be fitted without their presence, are required to take great care in taking measures. Suitable blanks, with full instructions, are always sent for that purpose. Should errors occur, they are generally discovered upon a thorough examination before the limb is made, and new blanks returned for new measures and drafts, which generally accomplish the desired object. Too much care cannot be had in taking the measures, and they cannot well make mistakes if they adhere *strictly* to the directions that are *fully* given upon the blank.

PRINTED INSTRUCTIONS are always sent with every leg, giving full directions for adjusting the Limb, and treating the stump in all its bearings,

SOCKS FOR STUMPS.

It is frequently asked by persons in want of Artificial Limbs (who have not worn them and consequently know but little about them, or their adjustment) "*Is the socket of the Artificial Limb PADDED, or what keeps the stump from coming in contact with the wood, or other hard substance of the Artificial Limb?*"

In answer to this question you are informed that our system of shielding and protecting the stump is by using a neat and well fitting sock, of very fine soft woolen yarn, knit to fit the stump as well as the best fitting socks do the feet, the sock to extend from the body to end of stump.

We have knitting machines, constantly at work manufacturing socks, and can furnish them at short notice, to fit any stump, in case they are not among our assortment of some hundreds, constantly kept on hand. One sock is always furnished without charge, with a new Artificial Limb. Orders for any quantity not exceeding four pounds can be sent by mail, to those desiring them.

Seeing the necessity of something of this kind, we adopted this feature of making and supplying these now considered indispensable articles, in the year 1868, and it has proved to be quite a business of itself, and of great benefit to those compelled to wear Artificial Limbs.

They are very well adapted to wear on the stump as soon as it is healed, and before applying the Artificial Leg, in order to keep the stump warm and help to compress and strengthen it.

No.	For Sock suitable for Stump of	Circumference at body or largest place of measurem't.	PRICE	
			each	per doz.
1	10 inches or less in length	15 inches or less.	\$0.50	\$5 00
2	" " " "	over 15 inches.	60	6 00
3	over 10 and not over 15 in., length.	15 inches or less.	60	6 00
4	" " " "	over 15 inches.	70	7 00
5	over 15 " 20 in. "	15 inches or less.	70	7 00
6	" " " "	over 15 inches.	80	8 00
7	over 20 " 25 in. "	15 inches or less.	80	8 00
8	" " " "	over 15 inches.	90	9 00
9	over 25 " 30 in. "	15 inches or less.	90	9 00
10	" " " "	over 15 inches.	1.00	10 00

$\frac{1}{2}$ and $\frac{1}{4}$ doz. sold at the same rates as per doz.

In some cases of amputation below knee, a short sock in addition to the full length one is required, to come up only to the knee-joint. For such cases, No. 1 or 3 is most suitable.

In taking measures for Socks, please adhere to the following instructions:—First, take the length of stump from body to end, then circumference at body and at a distance of about 3 inches apart to end.

If the measures are for Stump below the knee and the sock to come only to the knee, then commence at knee and state *length from center of knee joint to end*, circumference at knee, and so on down same as in all other cases. If for knee bearing stump, take measure same as in cases where the knee joint is used and flexible.

Where a single sock, or less than a half dozen are ordered, the price is at single rates, and sent by mail, at our expense of postage, but where half dozen and upwards are ordered, they are sold at dozen rates, and the purchaser is required to pay the postage or express charges.

PRICES AND TERMS.

For an Artificial Leg, applicable to any usual point of amputation either above or below knee-joint. \$100 00

An Artificial Arm, for cases where amputation is above the elbow-joint. 75 00

Where below, and stump of sufficient length to use the elbow-joint. 50 00

For applying Rubber Feet to other kinds of Legs, for each foot. 20 00

For applying Rubber Hands to other kinds of Arms, for each hand. 15 00

For apparatus for Syme's, Chopart's, or Pirogoff's amputations, where no thigh piece is needed, \$50.00.

All special cases out of the usual run, prices depend on each case.

Payment is required with the order, or if the party prefer, they can pay half in advance, and the balance when the limb is completed.

Parties at a distance who object to remitting the whole amount with the order, and desire their limbs to be sent to them by express, can pay the balance on delivery of the limb, provided they will pay the trifling extra expense of collecting.

Being aware that some persons object to thus pay for a Limb, before receiving it, they should bear in mind that this is an article made EXPRESSLY to order, and if not taken by the person for whom it is made, it is a great

chance if it fitted one in a hundred other applicants whom it was not made for. Thus is readily seen the necessity for advance payment, or a part of it at least, at the same time the patient can rest confident of just as good a limb and just as good a fit as they could were no payment made until after the limb is delivered, and in case any mistake or bad fit occurs, the maker holds himself strictly responsible for any deficiency in this respect caused by his own or workmen's mistake or carelessness, and will remedy them without extra charge should they occur.

SUSPENDERS AND WEBBING.

Suspenders for legs for amputation above knee, of our latest approved pattern, to pass over both shoulders, per pair, \$3.00.

The same for legs below the knee, to pass over one shoulder, \$1.50.

Shoulder straps and waist band combined, for ladies, suitable for any style of leg, per pair, \$5.00.

WEBBING.—We are having manufactured expressly for our own use, a superior quality of webbing which is more suitable in strength and color for limb wearers than any in the market; its color is light and cannot be affected by perspiration to soil the clothes. We can fill orders for the same at the following reduced rates, and in any quantity desired:

Elastic Webbing, 2 inches wide per yard, 60 cents.

Elastic Webbing, 1½ inches wide, per yard, 50 cents.

Elastic Webbing, 1 inch wide, per yard, 40 cents.

Non-Elastic Webbing, 2 inches wide, used for lower front strap on suspenders, also for check straps, very strong, per yard, 30 cents.

Non-Elastic Webbing, 1½ inches wide, used for same purpose as 2 inch, (only where lighter web is desired), per yard, 25 cents.

Non-Elastic Webbing, 1 inch wide, per yard, 20 cents.

BUCKLES—2, 1½ and 1 inch, nickel plated, very strong, each, 5 cents.

Buckles, ¾ and ⅝ inch leather covered, single tongue, each, 10 cents

LACINGS—of fine buskin, average length 40 inches, each, 25 cents, \$2.50 per dozen, or \$1.25 per half dozen.

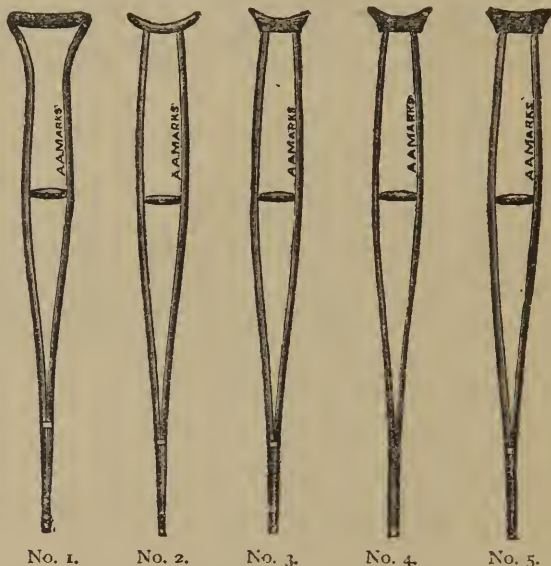
OIL CANS.—We keep in stock a new style of oil can, neat, and compact, capable of being carried in the pocket, oil cannot escape, each, 25 cents.

FELT—of Fine Wool used for pads and fillings, the best substance for lining a socket when the stump has reduced. Rates: ⅛ of an inch in thickness, per square inch, ½ of a cent or 50 cents per 100 square inches; 3-16 of an inch thickness, per square inch, ¾ of a cent, or 75 cents per 100 square inches; ¼ of an inch thickness, per square inch, 1 cent, or \$1.00 per 100 square inches. Sold in any shape to measurement.

HOW TO REMIT.

In making remittances it is preferable to purchase a Draft on some Bank in this City, to our order. If this is not convenient send by Postal Order. Where NEITHER of these facilities can be had, it is best to send the CURRENCY in Registered Letters, which can be done in any Post Office.

CRUTCHES.



The above cuts represent the different style of crutches. Description and prices as follows :—

No. 1. Elastic top made from Rosewood, Lancewood and Rock Maple, with full nickel trimmings and patent rubber cushioned bottom.

Price per pair, Rosewood	\$12 00
“ “ Lancewood.	12 00
“ “ Rock Maple.....	10.00

No. 2. Is what is termed the “cow horn top.” It is made from Rock Maple, ferrule nickel plated ; the handle is secured by a wire rivet running through both sides of crutch and handle, they are light, tasty and durable. Black cherry is used for arm piece and handles.

Price per pair. \$4.00.

With heavy brass ferrules and rubber bottoms combined ...\$5.00

No. 3. Is made from Rock Maple with Cherry arm pieces and handles, plain brass ferrules are used. Handles secured same as No. 2.

Price per pair. \$3.00

No. 4. Is the “plain splint” crutch, the arm pieces and handles are made from Black Cherry, and the rest of crutch of Rock Maple.

Price per pair.\$2.50

No. 5. Is the same as No. 3, with upholstered top, the arm pieces covered with leather, lined with cloth to hold the padding securely in its place, and it is padded with hair, an excellent, good looking and durable crutch.

Price per pair.....\$3.50

With heavy brass ferrule and rubber bottoms combined.\$4.50

If a style of crutch different from the above is desired, we will make them to order.

We have rubber tips or what may be called ferrule to go on the lower end of crutch, thus making a sort of cushion, rendering the crutch noiseless and at the same time preventing the marring of floors, they are applied to Nos. 2, 3, 4 and 5 crutches, can be used over the ferrule or in case it becomes necessary to shorten the crutch, they are just as well slipped on and used without any metallic ferrule as any way. They are also excellent to use on walking canes, and are so used to quite an extent. They come in five sizes and are numbered 17, 18, 19, 20, and 21; No. 17 fits a crutch or cane $\frac{3}{8}$ of an inch in diameter. No. 18, $\frac{3}{4}$, No. 19, $\frac{7}{8}$, No. 20, 1, and No. 21, $1\frac{1}{8}$ inch. They are elastic and will readily go on larger ends if required. Prices for 17, 18 and 19, 50 cents per pair. Nos. 20 and 21, 60 cents per pair, can be sent by mail, costing 4 cents additional. Single ones sent if desired at half the above prices. The money must in all cases accompany the order.

In ordering crutches give the following measurement of the party who is to use them:—From arm-pit to floor, while standing erect and arms hanging by the side.

Address,

A. A. MARKS,

701 Broadway, New York City, U. S. A.

OUR FOREIGN TRADE.

This department of our business has assumed proportions to require special attention. We have applicants from all quarters of the world, and are filling orders for foreign countries constantly; no stronger testimony of the durable and satisfactory qualities of our work can be given than this; from the fact that these parties living at so great a distance chose our work because they are denied access to the manufactory, and require an article that will keep in good working order without frequent repairing by the maker.

We subjoin extracts from a few of the many commendations we have received,

A. A. MARKS, New York City.

8 Laura Place, Bath, England.

MY DEAR SIR—I take great pleasure in informing you that I received my artificial leg on the 15th of April. I am glad to say that it gives me the greatest satisfaction. The fit is remarkably good and the finish superb. As I had never worn an artificial leg it came very awkward to me at first, but I am daily making great improvements and expect before long to become master of my situation. I must thank you for the kindness you have shown me and your prompt attention.

Yours very respectfully,

FRANK MILLS.

ARROYO, PORTO RICO.

West Indies.

I take great pleasure in stating that the artificial leg which you sent to me and which I have worn continuously, gives me complete satisfaction. Four times daily I walk from one town to another, a distance of four miles—without fatigue.

JOSE M. LEBRON.

GUAYAQUIL, ECUADOR, SOUTH AMERICA.

Having had the misfortune of losing one of my legs in 1874, while in Popayan, U. S. Colombia, through the agency of a friend of mine I had the good fortune of procuring a leg from your establishment. When I ordered the leg I was far from anticipating that an artificial leg could so perfectly make up for the natural one for walking, riding on horseback, and even dancing, supposing rather that an artificial leg served merely to disguise the defect and do away with the unpleasant appearance of mutilation. For your satisfaction and mine I will say that for the past *ten* years I have worn the artificial leg ordered of you, and that it has served me perfectly in my travels on horseback over these horrible South American roads. I have learned from experience that artificial legs with rubber feet are the best, uniting as they do mechanical simplicity, strength, convenience for walking, and great durability. I had a leg sent to me from Paris, but was obliged to lay it aside, finding it almost impossible to walk with it, and besides, the springs very soon got out of order.

MANUEL MARIA ARROYO.

NAPANEE, LENOX CO., ONT., CANADA.

MR. A. A. MARKS, New York City.

Dear Sir :—I am glad to have an opportunity of placing in your hands, for publication, my experience and views of your Patent Artificial Legs. My six years of constant labor and exercise on your Patent Limbs, after a few years of experience on other and more complicated substitutes, tell me that yours is in all respects by far the best in every essential feature, and over 50 per cent. more durable. The Rubber Foot suits me, and I want no other now.

Yours, &c.,

J. P. HANLEY,

Agent Grand Trunk Railway, Napanee, Ont.

(Leg above knee made from measure.)

SHAG VALLEY STATION, WAHIEMO, OTAGO.

NEW ZEALAND

You may be pleased to hear that Mr. Trapski is successfully using the leg you made for him, and can walk easily and quickly. He has every reason to be grateful to you for the trouble taken in his case and will, I'm sure, readily recommend your firm to any one suffering from a like misfortune. In this recommendation I shall gladly join.

FRANK D. BELL.

The India-rubber foot which is on the artificial leg is a most excellent invention; without it I question my ability to walk with safety in this country, the streets are so very rough and stony.

My leg is my best friend; it is what I love the most, and without it my life would be a void.

I am, your attentive friend,

MANUAL A. PARRAGA.

Orizaba, Mexico :

Dear Sir :—I have the greatest pleasure in addressing you these few lines in order to express the satisfaction which I have with the artificial leg you manufactured for me. To its comfort and stability I owe the invaluable treasure of walking almost naturally. I am pleased with its lightness as well as its easy movements, which so closely approximate nature. You may also take these lines as an expression of my appreciation of the many attentions and kindnesses which in your establishment were paid to your affectionate

Obedient Servant,

EL VIZCONDE de SAN ROMAN.

(Leg below knee fitted from measure.)

49 NORWOOD ST., BELFAST, IRELAND,

Dear Sir :—On Nov. 24, 1874, I fell from the mast of a ship in Delaware Bay and broke both my legs, one of which was so badly smashed that Dr. O'Neill, of the University Hospital, Philadelphia, advised amputation, which was done a few inches below the knee. I came out of the hospital in 1875, and went to reside with a friend in Baltimore. About the latter end of May, 1875—I am not sure of the date—I gave some money I had scraped together to a clergyman named Rev. C. McIlfresh, who took an interest in seafaring men. He advised me to purchase an artificial limb, and took me to an agent of yours in Baltimore, who took the measurements and said he would send to you for the leg. The leg arrived sometime about the latter end of June, 1875, and I have been wearing it ever since. I would like to get another just like it. Kindly say per return post what the cost of a new limb would be carriage free to Belfast. The limb I have has a rubber foot and the usual hinge for amputation below the knee. It is a pity you have not an agent here, for there is only one party in this city who makes artificial legs and they are not to be compared with yours for durability, neatness and comfort. This party made a botch of mine trying to repair it; before that I could go distances without any difficulty, but now I am afraid to go far for fear of breaking down.

Trusting to hear from you soon,

Yours respectfully,

SAMUEL MCKEE.

DR. MARKS.

PLACETAS, ISLAND OF CUBA.

The limb you made, through my order, for Miss Pina, has given such good results it is quite an advertisement for you, and will bring many orders.
J. M. FORTUN.

CARDENAS, CUBA.

The leg you made for me from measures has given satisfaction. I use it with great facility.

SILVERIO PINERA.

SANTIAGO DE CUBA.

Gratitude is one of the noblest sentiments of the human heart. The artificial leg you made for me is so perfect as to enable me to walk well and comfortably.

JOAQUIN RICOLA MUQUERCIA.

CALLAO, PERU, SOUTH AMERICA, Dec. 5, 1885.

I beg to state that I find the leg you made for me from measurements far superior as to quality, durability and comfort, than the leg I had previously from a London house.

D. MCGUIRE,

Pacific Steam Navigation Co.

FROM THE SON OF THE PRESIDENT OF THE REPUBLIC
OF PERU, SOUTH AMERICA.

SECRETARIE DE S. E. EL PRESIDENTE, }
LIMA, PERU, S. A., Nov. 25, 1885. }

(Translation.)

I take great pleasure in assuring you that the artificial leg which I ordered of you to replace the leg I lost in the engagement of August 27, 1884, has proved to my entire satisfaction. It is but just that I should recommend your work since I have been enabled to avail myself of it to such advantage.

I am yours very truly,

ABSOLON M. YGLESIAS.

ST. THOMAS, WEST INDIES, Nov. 25, 1884.

On February 15 I had my foot crushed so severely that amputation was necessary. Owing to the injury sustained the joint could not be saved. While in hospital I saw one of Mr. Marks's pamphlets regarding artificial limbs. I wrote him, and he sent me instructions for measuring, etc., which were taken and forwarded to him. I now wear one of Mr. Marks's artificial legs, and must say that it has given me perfect satisfaction in every respect. I consider the India rubber foot a great improvement. Dispensing with the machinery of the ankle joint, it also gives the lateral motion on uneven ground. My step is perfectly easy, and no one except one who knows of my condition could detect that I am wearing an artificial leg. I work at the bench, my occupation being a carpenter. I highly commend the leg for its simplicity and comfort, and would give Mr. Marks the preference of all others that I know of.

R. D. MOTHERSILL.

LETTER FROM THE DISTINGUISHED ORATOR, GENERAL
GEORGE A. SHERIDAN.

MORTON HOUSE, NEW YORK CITY,
July 1, 1885.

My Dear Doctor :—The last leg you made for my son came promptly, and is, if possible, more satisfactory than the one he had from you heretofore. The boy is now fifteen years old ; he has worn a leg of your make for the past five years, and *always with comfort and satisfaction*. Visiting him at his school a while since, I found he was out for a day's fishing ; when he returned and stated where he had been, the teacher remarked he had walked at least twelve miles. I asked the boy if he was not used up ; he replied : " No, papa ; thanks to the good old doctor (that's you), I don't get used up any more than boys who have two legs of their own " George skates on steel or roller skates, rides a bicycle, and in short enjoys to the full the usual sports of boys of his own age. For this we have you to thank more than any one in the world.

Refer to me at any time. A letter will always reach me if sent to the Morton House, New York.

Yours truly,

TO DR. A. A. MARKS,
Broadway, N. Y.

GEO. A. SHERIDAN.

From G. G. CARMEN of CUBA, KY.

I find your patent to be what you recommend. It is the easiest wearing leg in the world.

From WM. H. O'BRIEN of BURLINGTON, VT.

I am satisfied with your leg, and don't believe there is a better made.

From JAMES DOWNING of CARRIZO, TEXAS.

The new leg fits splendidly. I walk everywhere I please, without cane or crutch.

From E. P. LAWTON of GREENFIELD CENTRE, N. Y.

The pair of legs you made for me are doing good service. I walk without a cane.

From DAVID T. STEPHENSON of PILOT KNOB, IND.

The pair of legs are all right. All are surprised to see how well I walk.

From T. W. SLOAN, M.D., of ALKALI, OREGON.

The artificial leg you made for Mr. R. will give great satisfaction.

From L. M. PERKINS of ST. JAMES HOTEL, ST. LOUIS, MO.

I like your leg better than any other I have ever seen.

From P. J. COLE of 338 PENNSYLVANIA AV., BALTIMORE, MD.

The leg you made for me in 1880 has proved satisfactory. I have worn it every day.

From D. K. DICKINSON, M.D., of LEAD CITY, DAKOTA.

I like your leg very much, and will send you my business hereafter. Mr. Callahan's leg is doing well.

MARKS' PATENT ARTIFICIAL LIMBS, NEW YORK CITY.

A COMBINED KNIFE AND FORK

— FOR —

PERSONS HAVING THE USE OF BUT ONE HAND.

Patented March 13th, 1886.

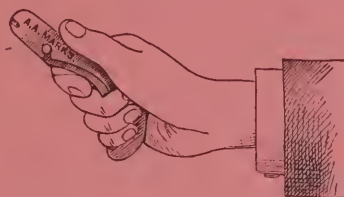


Fig. 1. The knife folded as carried in the pocket.

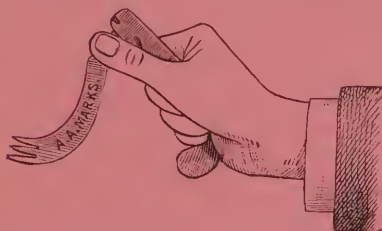


Fig. 2. Knife partly opened showing the manner in which the operation is performed.

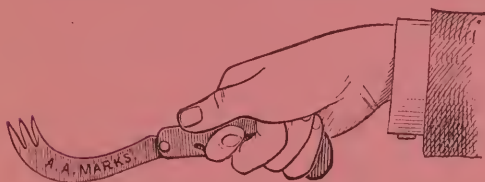


Fig. 3. Knife open in position for cutting.



Fig. 4. Knife inverted and fork brought in position.

The preceding engravings represent our new device for the convenience of those who have either temporarily or permanently lost the use of one of their hands, and who do not use an artificial hand in eating. It consists of a knife and fork combined, capable of being folded and carried in the pocket. The knife blade is of a crescent shape which, by a rolling movement and a slight pressure, given to it by the wrist, will cut meat or any article of food, without danger of moving on the plate. By rotation of the wrist the fork can be brought into position and the morsels conveniently carried from the plate to the mouth, all accomplished by but one hand, with little exertion and without attracting attention. The knife blade, in either the opened or closed position is firmly secured by a locking arrangement which is under the control of the thumb, thus the danger of closing on the fingers when in use, or of opening or cutting or piercing the clothing when carried in the pocket is obviated. This contrivance is without springs or complication, is simple and effective. The blade and handle are made of fine steel and heavily nickel plated. The knife can be immersed in hot or cold water for cleansing, without danger of cracking or rusting.

Sent by mail on receipt of **\$3.00.**

Address :

A. A. MARKS,

701 BROADWAY, NEW YORK CITY,

Inventor, Patentee and Manufacturer of the Celebrated

ARTIFICIAL LIMBS,

WITH RUBBER HANDS AND FEET.

From W. H. ROBERTS of ARGOS, IND.

I received the substitute ; am delighted with it. The natural, easy, pliable rubber foot " takes the cake," and no mistake.

From EWALD SCHNEIDER of MOUND CITY, ILL.

Your leg is the best, and I know it.

From J. D. CARPENTER, M.D., of NO. SPRINGFIELD, MO.

My leg was promptly received. I am well satisfied with it.

From WM. C. CRESSWELL of VERNON JUNCTION, OHIO.

Never had as much comfort with any leg as with this one of yours, which I am now wearing.

From J. J. WEAVER of ANDERSONVILLE, GA.

I am happy to inform you that my leg is highly satisfactory. From the first I walked the premises without a cane and without pain.

From THOMAS R. HUGHES of NEW CASTLE, WASHINGTON TERRITORY.

I must acknowledge your leg to be the most complete fit I have ever worn. It gives me entire satisfaction.

From JOHN FORD of PLANTERSVILLE, S. C.

I have worn your make of limbs for many years ; they are far superior to what I had formerly worn.

From W. E. PITMAN, M.D., of LYNCHBURG, VA.

I am very much pleased with the rubber foot. I have had more comfort with it than I have ever had with any other kind.

From DAVID H. DORN of LENA, ILL.

I am wearing one of your make of limbs, and regard it the best artificial limb in the market.

From WM. KELLY of LOCKPORT, ILL.

I have been solicited to patronize other establishments for my government limbs, but have declined to do so owing to the satisfaction and ease I get from yours.

From AUG. BIEBEL of GUNNISON, CAL.

I am well pleased with your leg.

From JOHN J. REAMER of TOLEDO, OHIO.

In regard to the artificial arm my uncle ordered of you, I would say that he is perfectly well satisfied with it, and would not do without it.

From EDGAR H. VINCENT of YARMOUTH PORT, MASS.

I have received your leg and am well pleased with it ; it works nicely. I have worn it every day since I got it.

From JOSEPH B. MOORE of NASHVILLE, TENN.

I have an artificial leg from you, ordered through Dr. D. K. Dickinson. It has given me good satisfaction. If you ever want a recommendation, I will gladly give it.

From GEO. W. HARVEY of VAN ETTENVILLE, N. Y.

I am walking so well on your artificial leg no one can tell which is the artificial.

THE LARGEST
MANUFACTORY OF ARTIFICIAL LIMBS
IN THE WORLD

Fourteen First Premiums in Succession.
U. S. Government Manufacturer



Invalid Rolling Chairs and Crutches.
Established 1853

BROADWAY

CROSS & CO. N.Y.